Improving the sustainability of bioenergy via Agro-Environmental Zoning (AEZ): South-South lessons

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Improving the sustainability of bioenergy via Agro-Environmental Zoning

South-South Lessons

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Major ENVIRONMENTAL criteria

- Net GHG balances
- Land use change
- Net energy balances
- Water use
- Biodiversity
- Soil quality & health
- Pollution (air, water, soil)
- etc

Sources: Hill *et. al*, 2006; Searchinger *et. al, 2008*; Williams *et. al*., 2009; Ackom *et. al.,* 2010

Major SOCIAL principle & criteria

- Avoidance of competition with food
- Consultation & communication with local communities
- Compliance with national laws and ratified international laws on employment conditions and workers' rights
- Bioenergy production shall not take place on contested lands.
- e.t.c….

Sources: ILO, RSB, GBEP

Brazil
Agro-ecological sugarcane production

Key Criteria:

- Environmental aspects
- Exclusion of pristine ecosystem i.e. *Amazon and Pantanal biomes, Upper Paraguay River Basin.*
- Avoiding conflict with food production
- Preference for direct precipitation/rainfall over full irrigation
- Degraded pastures

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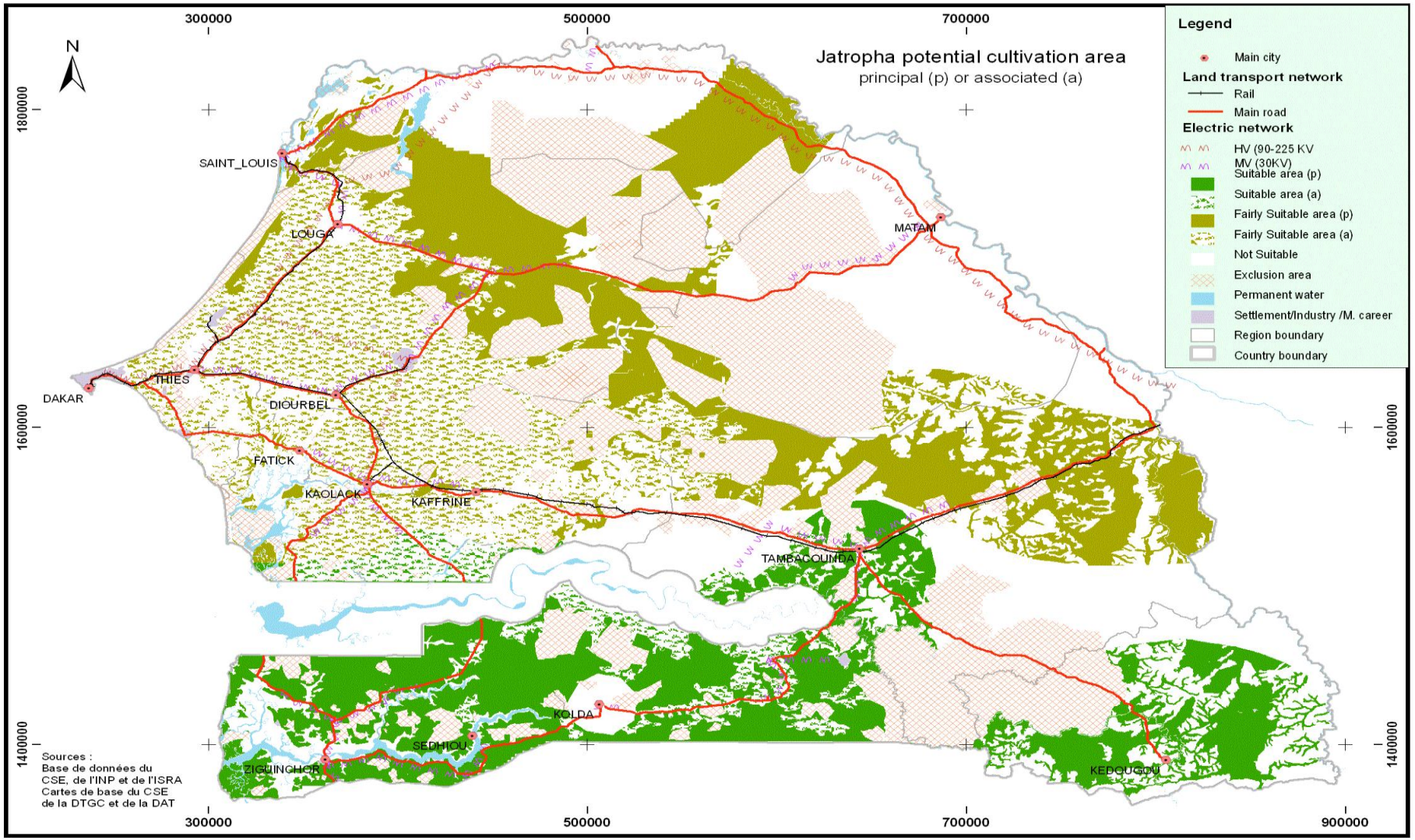
Agro-ecological mapping for bioenergy crop: Senegal



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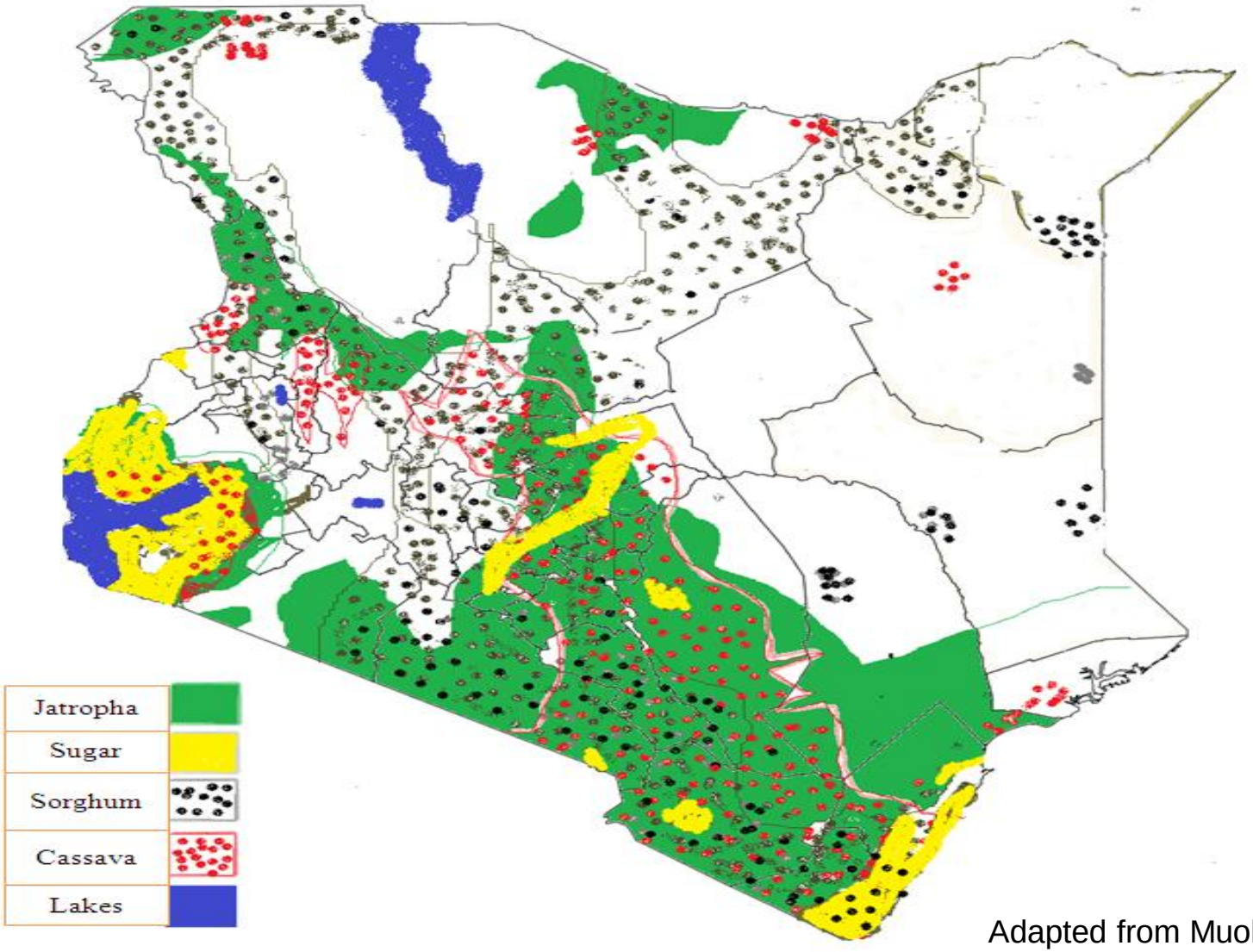
Agro-ecological mapping for bioenergy crops: Kenya



Adapted from Muok *et. al.* 2010.

Key messages

- Agro-environmental zonings – should be the likely condition for issuing permits/license for energy crop production
- Agro-ecological zonings avoids competition of land from food and fuel purposes, as well as the prevention of the use of pristine ecosystems for bioenergy production.
- Agro-ecological zonings in first mover countries provide invaluable lessons for consideration and learning for other African countries.
  - e.g. COGEN Africa (with UNEP, GEF and AfDB).
- Bioenergy derived from sugar cane and non-food based feedstock including residues are often preferred options
- Comprehensive bioenergy sustainability policy integrated into national development plans.

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Thank you!

questions and comments

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